## REMARKS

Claims 1-22 are presently pending in the application. In view of the claim argument presented hereinbelow, Applicants respectfully submit that these claims are now in condition for allowance.

### Claim Rejections -- 35 U.S.C. § 103(a)

Claims 1-22 stand rejected under Section 103(a) as being unpatentable over Menasce et al. "Capacity Planning for Web Performance, Metrics, Models and Methods," 1998 ("CWPA(98)") in view of Li et al. U.S. Patent No. 5,583,792 ("Li") or Waclawsky et al. U.S. Patent No. 5,197,127 ("Waclawsky"). Applicants respectfully traverse the rejection and submit that the combination of these references fails to teach or suggest the claimed invention.

At the outset, Applicants respectfully point out that the Examiner failed to furnish a copy of the primary reference that forms a basis for the rejected claims, CPWP(98), in accordance with Patent Office procedure. This made it very difficult to provide a complete response to the outstanding Office Action. As set forth in the MPEP:

> copies of documents cited will be provided as set forth in §707.05(a). That is, copies of documents cited by the examiner will be provided to applicant *except* where the documents:
>
> (A) are cited by applicant in accordance with MPEP §609, §707.05(b), and §708.02;
>
> (B) have been referred to in applicant's disclosure statement;
>
> (C) are cited and have been provided in a parent application; or
>
> (D) are U.S. Patents which are cited at allowance (MPEP § 1302.04). (See, MPEP §707.05, Citation of References, http://www.uspto.gov/web/offices/pac/mpep/documents/0700_707_05.htm#sect707.05 (emphasis in original)).

Since none of conditions A-D are met here, a copy of the relevant portions of CPWP (98) should have been provided to Applicants. Nevertheless, Applicants submit that the claimed invention is patentable over the asserted combination.

The present invention provides a method and apparatus for modeling a web server to enable the performance of Web server platforms to be evaluated and compared, by modeling a server as a plurality of subsystems. In an illustrative embodiment, a model in accordance with an aspect of the invention captures key performance limiting factors of an HTTP server. As described in the specification:

> The results lead to fast-to-evaluate approximations of the key performance measures of a Web server, like the server throughput, the end-to-end service time, and the blocking probabilities. Page 4, line 23 – Page 5, line 3.
>
> . . . .
>
> The embodiments of the invention are useful for modeling and analysis of the impact of the different components on Web server performance. Accordingly, the embodiments of the invention describe a new analytic model for Web servers. HTTP transactions proceed along a number of phases in successive order. Therefore, the HTTP flows within a Web server can be described by a tandem queueing model consisting of the following sub-models:
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> - a multi-server, zero-buffer blocking model for the TCP/IP connection set-up phase;
> - a multi-server, finite-buffer queueing/blocking model for the HTTP server processing; and
> - a multi-server, infinite-buffer queueing model for the network I/O sub-system. Page 5, lines 7 – 17.

As set forth in claim 1, an exemplary method for modeling a web server in accordance with the invention, comprises the steps of:

> identifying a plurality of sub-systems for the server;
>
> representing each sub-system as a queue, with each queue operably coupled together; and
>
> iteratively adjusting an arrival rate and a service time for each queue to account for performance by other queues.

None of the cited art, either taken alone or in combination, teaches or suggests the invention of claim 1.

The Examiner contends that CPWP (98) "is explicit in teaching models for constructing queuing systems that cover the web servers and other internet systems that interact with web servers. . . .However [CPWP(98)] does not go into great detail as to combining the metrics with these models for interactively and iteratively improving the network server operations as is clearly delineated in Li et al. and Wacklawsky et al., individually." Office Action at Page 4, lines 5 – 12. Again, since Applicants have not been provided with a copy of the relevant portions of CPWP(98), it is difficult to distinguish this reference. However, the Examiner does not assert that CPWP(98) teaches modeling a web server by sub-models represented by queuing systems.

Turning first to Li, that reference contains absolutely no teaching or suggestion of modeling a web server by "representing each sub-system as a queue, with each queue operably coupled together" and "iteratively adjusting an arrival rate and a service time for each queue to account for performance by other queues." Li is concerned with an entirely different issue, namely, a method and apparatus which provides a general solution technique for the integration of traffic measurement and queuing analysis. See Abstract. There is nothing in the voluminous disclosure of Li that suggests modeling a server as claimed by applicants. Thus, even if, assuming *arguendo*, that CPWP(98) and Li are properly combinable, such combination would fail to reach the claimed invention.

With respect to Waclawsky, that patent discloses a method of data flows in a communications network. As described in Waclawsky:

> The method includes the steps of setting a packet transmission window to have a maximum quantity of N packets which can be transmitted within an interval from a terminal in the network and setting a queued packet threshold value to a quantity of C packets which may be held in a queue during an interval at the terminal. The method can also be applied to an intermediate node in the network.
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> The method then defines a data flow efficiency variable S as a binary number having at least three bits, with a first bit B1 which

> assumes a binary value of one if the number of packets transmitted by the terminal during an interval is equal to N, a second bit B2 which assumes a binary value of one if any packet is held in the queue during an interval and a third bit B3 which assumes a value of one if more than C packets are held in the queue during an interval.
>
> The method then counts the number of packets transmitted from the terminal during a measurement period and sets B1 equal to one if the number of packets transmitted in any interval during the period is equal to N, it sets B2 equal to one if any packet is held in the queue during the measurement period, and it sets B3 equal to one if more than C packets are held in the queue during any interval in the measurement period.
>
> The method then determines the value of the data flow efficiency state variable S from values of B1, B2 and B3 set by the counting and setting steps and it accesses a knowledge base containing network problem determination recommendations which are accessible with the value of the data flow efficiency state variable S.
>
> Finally, the method outputs a problem determination recommendation for optimizing data flow efficiency in the network in response to accessing the knowledge base with the value of S. Col. 1, line 67 – Col. 2, line 35.

There is nothing in Waclawsky that even remotely discloses or suggests modeling a server using the claimed steps of "representing each sub-system as a queue, with each queue operably coupled together" and "iteratively adjusting an arrival rate and a service time for each queue to account for performance by other queues" as called for in independent claim 1 (and those claims dependent on claim 1). The same analysis applies to independent claims 11 and 22, as well as those claims dependent thereon.

In view of the above, Applicants respectfully submit that claims 1-22 are patentable over the cited art, and allowance of these claims at an early date is solicited.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. 1.16 or 1.17 to AT&T Corp. Account No. 01-

2745. The Examiner is invited to contact the undersigned at (201) 224-7957 to discuss any matter concerning this application.

Respectfully submitted,
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By:

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